IN THE CLAIMS:

Claim 1 has been cancelled.

1. (Cancelled)

2-40. (Cancelled)

Add the following new claims:

41. (New) A method for determining an EMG-signal out of a raw signal comprising the steps of:

obtaining a plurality of signals from a subject via a plurality of electrodes configured to interact with the subject to detect signals from the diaphragm of the subject, each electrode having a signal channel associated therewith;

combining the respective signals of the signal channels to form a multi-channel raw signal;

automatically electronically estimating an EKG-signal and an EMG-signal out of said raw signal; and

dependent on said estimated EKG signal and said estimated EMG signal, automatically electronically determining an EMG window in a frequency region and filtering said EMG signal out of said raw signal within said window.

42. (New) A method as claimed in claim 41 comprising filtering said EMG signal from said window.

43. (New) A method as claimed in claim 42 comprising automatically electronically dividing said window into at least two sub-windows with respectively different filtering criteria dependent on said estimated EKG signal and said estimated EMG signal.

44. (New) A method as claimed in claim 41 comprising automatically electronically determining a width of said window dependent on said estimated EKG signal and said estimated EMG signal.

45. (New) A method as claimed in claim 41 wherein said window has a lower frequency, and automatically electronically determining said lower frequency of said window dependent on said estimated EKG signal and said estimated EMG signal.

46. (New) A method as claimed in claim 41 comprising determining said window as a window having a constant width starting from a lower frequency, and automatically electronically determining said lower frequency dependent on said estimated EKG signal.

47. (New) A method as claimed in claim 41 comprising automatically electronically estimating a noise signal from said raw signal, and automatically electronically determining an upper frequency of said window dependent on said estimated EMG signal and said estimated noise signal.

48. (New) A method as claimed in claim 41 comprising automatically electronically determining a middle frequency of said estimated EMG signal, and using said middle frequency to monitor or measure at least one of muscle fatigue and muscle activity of the patient.

49. (New) A method as claimed in claim 48 comprising automatically activating a humanly perceptible alarm dependent on deviation of said monitored or measured muscle fatigue from a reference value.

50. (New) A method as claimed in claim 48 comprising automatically controlling a ventilator configured to interact with the patient to provide increased ventilation support to the patient dependent on said monitored or measured muscle fatigue.

51. (New) A method as claimed in claim 44 comprising automatically electronically determining a middle frequency of said estimated EMG signal and using said middle frequency as a measure of a degree of sedation of the patient.

52. (New) A method as claimed in claim 51 comprising automatically using said middle frequency to regulate an amount of sedative administered to the patient.

53. (New) A method as claimed in claim 41 comprising automatically electronically identifying a first derivative of a curve representing said estimated EKG signal, and placing a lower frequency of said window dependent on said first derivative.

54. (New) A device for determining an EMG-signal out of a raw signal comprising:

a plurality of electrodes configured to interact with a subject to detect signals from the diaphragm of the subject, each electrode having a signal channel associated therewith, the respective signals of the signal channels being combined to form a multi-channel raw signal;

a computer that estimates an EKG-signal and an EMG-signal out of said raw signal and, dependent on said estimated EKG signal and said estimated EMG signal, determines an EMG window in a frequency region and filtering said EMG signal out of said raw signal within said window.

55. (New) A device as claimed in claim 54 wherein said computer comprises an electronic filter that filters said EMG signal from said window.

56. (New) A device as claimed in claim 55 wherein said computer divides said window into at least two sub-windows with respectively different filtering criteria dependent on said estimated EKG signal and said estimated EMG signal.

57. (New) A device as claimed in claim 54 wherein said computer determines a width of said window dependent on said estimated EKG signal and said estimated EMG signal.

58. (New) A device as claimed in claim 54 wherein said window has a lower frequency, and wherein said computer determines said lower frequency of said window dependent on said estimated EKG signal and said estimated EMG signal.

59. (New) A device as claimed in claim 54 wherein said computer determines said window as a window having a constant width starting from a lower frequency, and determines said lower frequency dependent on said estimated EKG signal.

60. (New) A device as claimed in claim 54 wherein said computer estimates a noise signal from said raw signal, and determines an upper frequency of said window dependent on said estimated EMG signal and said estimated noise signal.

61. (New) A device as claimed in claim 54 wherein said computer determines a middle frequency of said estimated EMG signal, and using said middle frequency to monitor or measure at least one of muscle fatigue and muscle activity of the patient.

62. (New) A device as claimed in claim 61 wherein said computer activates a humanly perceptible alarm dependent on deviation of said monitored or measured muscle fatigue from a reference value.

63. (New) A device as claimed in claim 61 wherein said computer controls a ventilator configured to interact with the patient to provide increased ventilation support to the patient dependent on said monitored or measured muscle fatigue.

62. (New) A device as claimed in claim 57 wherein said computer determines a middle frequency of said estimated EMG signal and uses said middle frequency as a measure of a degree of sedation of the patient.

63. (New) A device as claimed in claim 62 wherein said computer uses said middle frequency to regulate an amount of sedative administered to the patient.

64. (New) A device as claimed in claim 54 wherein said computer identifies a first derivative of a curve representing said estimated EKG signal, and places a lower frequency of said window dependent on said first derivative.

65. (New)A computer-readable medium encoded with a data structure for determining an EMG-signal out of a multi-channel raw signal, obtained from a subject via a plurality of electrodes configured to interact with the subject to detect signals from the diaphragm of the subject, each electrode having a signal channel associated therewith, said data structure causing a computer, in which said medium is loaded, to:

combine the respective signals of the signal channels to form a multi-channel raw signal;

estimate an EKG-signal and an EMG-signal out of said raw signal; and

dependent on said estimated EKG signal and said estimated EMG signal, determine an EMG window in a frequency region and filtering said EMG signal out of said raw signal within said window.

66. (New) A computer-readable medium as claimed in claim 65 wherein said data structure causes said computer to electronically filter said EMG signal from said window.

67. (New) A computer-readable medium as claimed in claim 66 wherein said data structure causes said computer to divide said window into at least two sub-windows with respectively different filtering criteria dependent on said estimated EKG signal and said estimated EMG signal.

68. (New) A computer-readable medium as claimed in claim 65 wherein said data structure causes said computer to determine a width of said window dependent on said estimated EKG signal and said estimated EMG signal.

69. (New) A computer-readable medium as claimed in claim 65 wherein said window has a lower frequency, and wherein said data structure causes said computer to determine said lower frequency of said window dependent on said estimated EKG signal and said estimated EMG signal.

70. (New) A computer-readable medium as claimed in claim 65 wherein said data structure causes said computer to determine said window as a window having a constant width starting from a lower frequency, and determining said lower frequency dependent on said estimated EKG signal.

71. (New) A computer-readable medium as claimed in claim 65 wherein said data structure causes said computer to estimate a noise signal from said raw signal, and determine an upper frequency of said window dependent on said estimated EMG signal and said estimated noise signal.

72. (New) A computer-readable medium as claimed in claim 65 wherein said data structure causes said computer to determine a middle frequency of said estimated EMG signal, and use said middle frequency to monitor or measure at least one of muscle fatigue and muscle activity of the patient.

73. (New) A computer-readable medium as claimed in claim 72 wherein said data structure causes said computer to activate a humanly perceptible alarm dependent on deviation of said monitored or measured muscle fatigue from a reference value.

74. (New) A computer-readable medium as claimed in claim 72 wherein said data structure causes said computer to control a ventilator configured to interact with the patient to provide increased ventilation support to the patient dependent on said monitored or measured muscle fatigue.

75. (New) A computer-readable medium as claimed in claim 68 wherein said data structure causes said computer to determine a middle frequency of said estimated EMG signal and using said middle frequency as a measure of a degree of sedation of the patient.

76. (New) A computer-readable medium as claimed in claim 65 wherein said data structure causes said computer to use said middle frequency to regulate an amount of sedative administered to the patient.

77. (New) A computer-readable medium as claimed in claim 65 wherein said data structure causes said computer to identify a first derivative of a curve representing said estimated EKG signal, and place a lower frequency of said window dependent on said first derivative.